

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Walter G. Dixon, et al.
Serial No.: 10/627,858
Filing Date: July 25, 2003
Confirmation No.: 2644
Group Art Unit: 2114
Examiner: Joshua A. Lohn
Title: SYSTEM AND METHOD FOR PROVIDING
REDUNDANT DATA LOAD SHARING IN A
DISTRIBUTED NETWORK

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

APPEAL BRIEF

Applicant has appealed to the Board of Patent Appeals and Interferences from the final decision of the Examiner issued September 6, 2006 and the Advisory Action issued November 21, 2006 finally rejecting Claims 1-26. In response to the Notice of Panel Decision from Pre-Appeal Brief Review issued December 22, 2006 Applicant respectfully submits herewith their brief on appeal.

REAL PARTY IN INTEREST

The present Application was assigned to Cisco Technology, Inc., a California corporation, as indicated by an assignment from the inventors recorded on July 25, 2003 in the Assignment Records of the United States Patent and Trademark Office at Reel 014334, Frames 0290-0295.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1-26 stand rejected pursuant to a Final Action issued September 6, 2006. Claims 1-26 are all presented for appeal.

STATUS OF AMENDMENTS

A Response to Examiner's Action was filed on June 28, 2006 in response to an Office Action mailed March 28, 2006. Claims 1-8, 11, 12, 14, and 16-26 were amended. A Response to Examiner's Final Action was filed on November 6, 2006 in response to a Final Action issued September 6, 2006. No further amendments were made to the claims. An Advisory Action issued November 21, 2006. Applicant filed a Notice of Appeal and Pre-Appeal Brief Request for Review on December 6, 2006. A Notice of Panel Decision from Pre-Appeal Brief Review issued on December 22, 2006 stating that the appeal is to proceed to the Board of Patent Appeals and Interferences.

SUMMARY OF CLAIMED SUBJECT MATTER

With respect to Independent Claim 1, a method for providing redundant data load sharing in a distributed network is provided. (See FIGURES 1 and 2 and page 4, lines 11-15). An original entry B is received and stored in a first one of a plurality of nodes X. (See FIGURE 1 and page 7, lines 14-18). A replicated data entry B' is generated from the original data entry B and the replicated data entry B' is stored in a second one of the plurality of nodes W. (See FIGURE 1 and page 7, lines 18-20). A failure in either the first one X or the second one W of the plurality of nodes is identified. (See FIGURE 2 and page 8, lines 5-9). A re-replicated data entry B'' in the non-failed first or second one of the plurality of nodes is generated in response to the failure. (See FIGURE 2 and page 8, lines 16-20). The re-replicated data entry B'' is stored in a third one of the plurality of nodes Y. (See FIGURE 2 and page 8, lines 20-24).

With respect to Independent Claim 11, a system 10 for providing redundant data load sharing in a distributed network is provided. (See FIGURE 1 and page 7, lines 2-13). The system includes a plurality of nodes 12. (See FIGURE 1 and page 7, lines 14-16). A first one of the plurality of nodes X receives and stores an original data entry B. (See FIGURE 1 and page 7, lines 16-18). The first one of the plurality of nodes X is operable to provide a replicate data entry B' to a second one of the plurality of nodes W. (See FIGURE 1 and page 7, lines 20-22). The first one of the plurality of nodes X is operable to determine a failure of the second one of the plurality of nodes W. (See FIGURE 2 and page 8, lines 5-9). The first one of the plurality of nodes X is operable to provide a re-replicated data entry B'' to a third one of the plurality of nodes Y in response to the failure of the second

one of the plurality of nodes W. (See FIGURE 2 and page 8, lines 12-24).

With respect to Independent Claim 17, a system 10 for providing redundant data load sharing in a distributed network is provided. (See FIGURE 1 and page 7, lines 2-13). An original entry B is received and stored in a first one of a plurality of nodes X. (See FIGURE 1 and page 7, lines 14-18). A replicated data entry B' is generated from the original data entry B and the replicated data entry B' is stored in a second one of the plurality of nodes W. (See FIGURE 1 and page 7, lines 18-20). A failure in either the first one X or the second one W of the plurality of nodes is identified. (See FIGURE 2 and page 8, lines 5-9). A re-replicated data entry B'' in the non-failed first or second one of the plurality of nodes is generated in response to the failure. (See FIGURE 2 and page 8, lines 16-20). The re-replicated data entry B'' is stored in a third one of the plurality of nodes Y. (See FIGURE 2 and page 8, lines 20-24).

With respect to Independent Claim 22, a computer readable medium including code for providing redundant data load sharing in a distributed network is provided. (See FIGURES 1 and 2 and page 7, lines 4-13, and page 12, lines 6-16). An original entry B is received and stored in a first one of a plurality of nodes X. (See FIGURE 1 and page 7, lines 14-18). A replicated data entry B' is generated from the original data entry B and the replicated data entry B' is stored in a second one of the plurality of nodes W. (See FIGURE 1 and page 7, lines 18-20). A failure in either the first one X or the second one W of the plurality of nodes is identified. (See FIGURE 2 and page 8, lines 5-9). A re-replicated data entry B'' in the non-failed first or second one of the plurality of nodes is generated in response to the failure. (See FIGURE 2

and page 8, lines 16-20). The re-replicated data entry B'' is stored in a third one of the plurality of nodes Y. (See FIGURE 2 and page 8, lines 20-24).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-3, 9, 11-14, 16-19, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Application No. 2004/0230862 issued to Merchant, et al.

2. Claims 4-8, 10, 15, 20, 21, 25, and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Application No. 2004/0230862 in view of U. S. Patent No. 5,812,748 issued to Ohran, et al.?

ARGUMENT

1. Claims 1-3, 9, 11-14, 16-19, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Application No. 2004/0230862 issued to Merchant, et al. According to M.P.E.P. §2143, to establish a prima facie case of obviousness, three criteria must be met. First, there must be some suggestion or motivation to combine the references. Second, there must be a reasonable expectation of success. Third, the prior art combination of references must teach or suggest all the claim limitations. The Examiner has not established that any criteria for a prima facie case of obviousness has been met in this instance.

First, there is no suggestion or motivation in the Merchant, et al. to modify it as proposed by the Examiner. The Examiner has not cited any language within the Merchant, et al. application that would suggest any capability for it to be modified as proposed. The Examiner states that one of ordinary skill in the art would be motivated to provide the feature of the claimed invention, presumably taught by the Merchant, et al. application. The rationale provided by the Examiner for this modification is purely subjective conjecture and speculation with no objective reasoning being provided to support modifying the Merchant, et al. application as has been proposed. The Examiner has merely provided baseless and subjective conclusory "it would have been obvious to combine" statements using improper hindsight reconstruction without any support for such conclusory statements from anywhere in the Merchant, et al. application. A statement that modifications of the prior art to meet the claimed invention would have been well within the ordinary skill of the art at the time the claimed invention was made because the reference relied upon to teach that all aspects of the claimed invention were

individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to modify the teachings of the references. See M.P.E.P. 2143.01. Since the Examiner has not provided any proper reasoning, let alone objective reasoning, the burden to establish the first criteria of a prima facie case of obviousness has not been met.

Second, a reasonable expectation of success has not been shown by the Examiner. There has also been no showing that the modified reference would even be able to perform the functionality of the claimed invention. The Examiner, without the improper hindsight look through the claimed invention, has not addressed how the proposed modification of the Merchant, et al. application would have any success whatsoever let alone a reasonable expectation of success. Therefore, Applicant respectfully submits that the Examiner has failed to establish the second criteria for a prima facie case of obviousness.

Third, the Examiner has not shown that the proposed Merchant, et al. application teaches or suggests all of the claim limitations. For example, Independent Claims 1, 11, 17, and 22 recite in general an ability to generate a re-replicated data entry in a non-failed first or second one of a plurality of nodes for storage at a third one of the plurality of nodes in response to a failure in the first or second one of the plurality of nodes. By contrast, the portions of the Merchant, et al. application cited by the Examiner specifically discuss removal of data from a faulty node. Thus, the Merchant, et al. application does not disclose re-replication of a data entry from a non-failed node for storage in a third node in response to identification of a failed node as provided in the claimed invention. The Examiner readily admits that the Merchant, et al. application fails to disclose

this feature. The Examiner attempts to justify the rejection of the claims as being obvious over the Merchant, et al. application. However, the portions of the Merchant, et al. application cited by the Examiner are concerned with merely relocating data from a node that is being selected for removal and not to data replication for redundant sharing as provided in the claimed invention. Thus, the Merchant, et al. application is still directed to removing data only from a non-working node. Second, there is no disclosure in the Merchant, et al. application that suggests the re-replication of data from a first non-failed node for storage in a third node that occurs as a result of a failure in a second node as required in the claimed invention.

Thus, the Examiner has failed to establish the third criteria for a prima facie case of obviousness. As a result of the improper modification of the reference, the lack of any expectation of success for the modification, and the lack of disclosure in the cited reference by the Examiner, there is an insufficient basis to support the rejection of the claims.

1. Claims 4-8, 10, 15, 20, 21, 25, and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Application No. 2004/0230862 issued to Merchant, et al. in view of U.S. Patent No. 5,812,748 issued to Ohran, et al. According to M.P.E.P. §2143, to establish a prima facie case of obviousness, three criteria must be met. First, there must be some suggestion or motivation to combine the references. Second, there must be a reasonable expectation of success. Third, the prior art combination of references must teach or suggest all the claim limitations. The Examiner has not established that any criteria for a prima facie case of obviousness has been met in this instance.

First, there is no suggestion or motivation to combine Merchant, et al. application and the Ohran, et al. patent as proposed by the Examiner. The Examiner has not cited any language within the Merchant, et al. application or the Ohran, et al. patent that would suggest any capability for them to be combined as proposed. The Examiner states that one of ordinary skill in the art would be motivated to provide the feature of the claimed invention, presumably taught by the Merchant, et al. application and the Ohran, et al. patent. The rationale provided by the Examiner for this combination is purely subjective conjecture and speculation with no objective reasoning being provided to support combining the Merchant, et al. application with the Ohran, et al. patent as has been proposed. The Examiner has merely provided baseless and subjective conclusory "it would have been obvious to combine" statements using improper hindsight reconstruction without any support for such conclusory statements from anywhere in the Merchant, et al. application or the Ohran, et al. patent. A statement that modifications of the prior art to meet the claimed invention would have been well within the ordinary

skill of the art at the time the claimed invention was made because the references relied upon to teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. See M.P.E.P. 2143.01. Since the Examiner has not provided any proper reasoning, let alone objective reasoning, the burden to establish the first criteria of a prima facie case of obviousness has not been met.

Second, a reasonable expectation of success has not been shown by the Examiner. There has also been no showing that the proposed combination of the Merchant, et al. application with the Ohran, et al. patent would even be able to perform the functionality of the claimed invention. The Examiner, without the improper hindsight look through the claimed invention, has not addressed how the proposed combination of the Merchant, et al. application with the Ohran, et al. patent would have any success whatsoever let alone a reasonable expectation of success. Therefore, Applicant respectfully submits that the Examiner has failed to establish the second criteria for a prima facie case of obviousness.

Third, the Examiner has not shown that the proposed Merchant, et al. - Ohran, et al. combination teaches or suggests all of the claim limitations. Independent Claim 1, from which Claims 4-8, and 10 depend; Independent Claim 11, from which Claim 15 depends; Independent Claim 17, from which Claims 20 and 21 depend; and Independent Claim 22, from which Claims 25 and 26 depend have been shown to be patentably distinct from Merchant, et al.. Further, the Ohran, et al. patent does not disclose any additional material combinable with the Merchant, et al. patent that would be material to patentability of these claims. In addition, just like the

Merchant, et al. application, the Ohran, et al. patent fails to provide any capability to re-replicate data entries as required by the claimed invention. Therefore, Applicant respectfully submits that Claims 4-8, 10, 15, 20, 21, 25, and 26 are patentably distinct from the proposed Merchant, et al. - Ohran, et al. combination.

Thus, the Examiner has failed to establish the third criteria for a prima facie case of obviousness. As a result of the improper modification of the reference, the lack of any expectation of success for the modification, and the lack of disclosure in the cited reference by the Examiner, there is an insufficient basis to support the rejection of the claims.

CONCLUSION

Applicant has clearly demonstrated that the present invention as claimed is clearly distinguishable over all the art cited of record, either alone or in combination, and satisfies all requirements under 35 U.S.C. §§101, 102, and 103, and 112. Therefore, Applicant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a Notice of Allowance of all claims.

Please charge Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. an amount of \$500.00 to satisfy the appeal brief fee of 37 C.F.R. §41.20(b)(2).

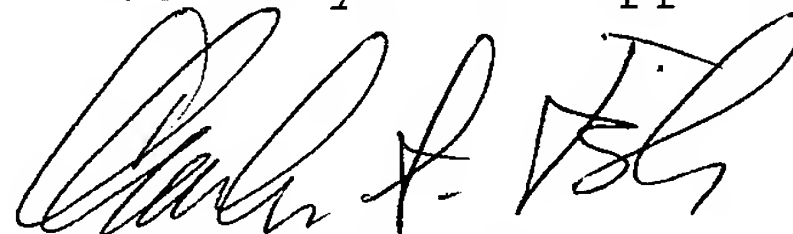
Applicant respectfully requests an extension of time for filing this Appeal Brief. Attached herewith is a Notification of Extension of Time in support thereof.

The Commissioner is hereby authorized to charge any fees or credit any overpayments associated with this Application to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.

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CLAIMS APPENDIX

1. (Previously Presented) A method for providing redundant data load sharing in a distributed network, comprising:

receiving an original entry;

storing the original data entry in a first one of a plurality of nodes;

generating a replicated data entry from the original data entry;

storing the replicated data entry in a second one of the plurality of nodes;

identifying a failure of either of the first one or the second one of the plurality of nodes;

generating a re-replicated data entry in the non-failed first or second one of the plurality of nodes for storage at a third one of the plurality of nodes in response to the failure in the first or second one of the plurality of nodes.

2. (Previously Presented) The method of Claim 1, further comprising:

determining whether there is sufficient capacity in the distributed network to handle data entry replication in response to the failure of the first or second one of the plurality of nodes.

3. (Previously Presented) The method of Claim 2, further comprising:

preventing replication of the original or replicated data entry at the third one of the plurality of nodes in response to insufficient capacity in the distributed network.

4. (Previously Presented) The method of Claim 3, further comprising:

dynamically adjusting the capacity of the distributed network in response to the failure of the first or second one of the plurality of nodes in order to store new data entries without replication.

5. (Previously Presented) The method of Claim 3, further comprising:

identifying a recovery of the failed first or second one of the plurality of nodes;

performing storage and replication of subsequently received data entries in response to the recovery of the failed first or second one of the plurality of nodes.

6. (Previously Presented) The method of Claim 5, further comprising:

adjusting the capacity of the distributed network in response to the recovery of the failed first or second one of the plurality of nodes.

7. (Previously Presented) The method of Claim 5, further comprising:

performing replication of those data entries previously stored but not replicated as a result of the failure of the first or second one of the plurality of nodes.

8. (Previously Presented) The method of Claim 1, further comprising:

identifying a recovery of the failed first or second one of the plurality of nodes;

including the recovered failed first or second one of the plurality of nodes in the storage and replication of subsequent data entries.

9. (Original) The method of Claim 1, further comprising:

establishing a capacity for the distributed network, the capacity representing an amount of data to be stored in the distributed network;

establishing a minimum number of the plurality of nodes required to provide redundancy in the distributed network.

10. (Original) The method of Claim 9, wherein at least a single occurrence of all data entries are maintained in the plurality of nodes when the number of plurality of nodes falls to one less than the minimum number.

11. (Previously Presented) A system for providing redundant data load sharing in a distributed network, comprising:

a plurality of nodes, a first one of the plurality of nodes operable to receive and store an original data entry, the first one of the plurality of nodes operable to provide a replicate data entry to a second one of the plurality of nodes, the first one of the plurality of nodes operable to determine a failure of the second one of the plurality of nodes, the first one of the plurality of nodes operable to provide a re-replicated data entry to a third one of the plurality of nodes in response to failure of the second one of the plurality of nodes.

12. (Previously Presented) The system of Claim 11, wherein each node includes a distributed control function operable to control storage and replication of the original data entry.

13. (Original) The system of Claim 11, wherein the first one of the plurality of nodes is operable to determine whether there is sufficient capacity in the distributed network to handle data entry replication in response to the failure of the second one of the plurality of nodes.

14. (Previously Presented) The system of Claim 13, wherein the first one of the plurality of nodes is operable to prevent replication of the original data entry at the third one of the plurality of nodes in response to insufficient capacity in the distributed network.

15. (Original) The system of Claim 14, wherein the plurality of nodes are operable to dynamically adjust the capacity of the distributed network in response to the failure of the second one of the plurality of nodes in order to store new data entries without replication.

16. (Previously Presented) The system of Claim 11, wherein the capacity of each of the plurality of nodes is adjusted in response to an addition of a new node or failure of an existing node.

17. (Previously Presented) A system for providing redundant data load sharing in a distributed network, comprising:

means for receiving an original entry;

means for storing the original data entry in a first one of a plurality of nodes;

means for generating a replicated data entry from the original data entry;

means for storing the replicated data entry in a second one of the plurality of nodes;

means for identifying a failure of either of the first one or the second one of the plurality of nodes;

means for generating a re-replicated data entry in the non-failed first or second one of the plurality of nodes for storage at a third one of the plurality of nodes in response to the failure in the first or second one of the plurality of nodes.

18. (Previously Presented) The system of Claim 17, further comprising:

means for determining whether there is sufficient capacity in the distributed network to handle data entry replication in response to the failure of the first or second one of the plurality of nodes.

19. (Previously Presented) The system of Claim 18, further comprising:

means for preventing replication of the original or replicated data entry at the third one of the plurality of nodes in response to insufficient capacity in the distributed network.

20. (Previously Presented) The system of Claim 19, further comprising:

means for dynamically adjusting the capacity of the distributed network in response to the failure of the first or second one of the plurality of nodes in order to store new data entries without replication.

21. (Previously Presented) The system of Claim 19, further comprising:

means for identifying a recovery of the failed first or second one of the plurality of nodes;

means for performing storage and replication of subsequently received data entries in response to the recovery of the failed first or second one of the plurality of nodes.

22. (Previously Presented) A computer readable medium including code for providing redundant data load sharing in a distributed network, the code operable to:

receive an original entry;

store the original data entry in a first one of a plurality of nodes;

generate a replicated data entry from the original data entry;

store the replicated data entry in a second one of the plurality of nodes, the original data entry and the replicated data entry including information as to where it is redundantly stored;

identify a failure of either of the first one or the second one of the plurality of nodes;

generating a re-replicated data entry in the non-failed first or second one of the plurality of nodes for storage at a third one of the plurality of nodes in response to the failure in the first or second one of the plurality of nodes.

23. (Previously Presented) The computer readable medium of Claim 22, wherein the code is further operable to:

determine whether there is sufficient capacity in the distributed network to handle data entry replication in response to the failure of the first or second one of the plurality of nodes.

24. (Previously Presented) The computer readable medium of Claim 23, wherein the code is further operable to:

prevent replication of the original or replicated data entry at the third one of the plurality of nodes in response to insufficient capacity in the distributed network.

25. (Previously Presented) The computer readable medium of Claim 24, wherein the code is further operable to:

dynamically adjust the capacity of the distributed network in response to the failure of the first or second one of the plurality of nodes in order to store new data entries without replication.

26. (Previously Presented) The computer readable medium of Claim 24, wherein the code is further operable to:

identify a recovery of the failed first or second one of the plurality of nodes;

perform storage and replication of subsequently received data entries in response to the recovery of the failed first or second one of the plurality of nodes.

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EVIDENCE APPENDIX

None

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RELATED PROCEEDINGS APPENDIX

None

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CERTIFICATE OF SERVICE

None